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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,717	08/20/2001	Hideaki Ninomiya	0756-2350	4618

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EXAMINER	
GEYER, SCOTT B	

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/931,717	NINOMIYA ET AL.	
	Examiner	Art Unit	
	Scott B. Geyer	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-14,19-26 and 31-34* is/are allowed.

6)☒ Claim(s) *1-8,15-18 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *16 July 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *18* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 7th, 2003 has been entered.

Information Disclosure Statement

2. The references cited within the IDS, entered as paper no. 18, have been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 3, 5, 27 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Feist et al. (6,533,968 B1) in view of Smithsonian Physical Tables (ninth revised edition) for teaching an inherent property of invar that is not mentioned in Feist et al.

4A. As to ***claims 1 and 27***, the Smithsonian Physical Tables is cited merely as a teaching reference of the thermal expansion coefficient of invar, which is between 0 and 2 ppm/°C (which is less than 6.5 ppm/°C). Feist et al. teach fixing a flexible substrate to an invar frame (column 5, lines 18-25).

4B. As to ***claims 2 and 28***, the Smithsonian Physical Tables is cited merely as a teaching reference of the thermal expansion coefficient of invar, which is between 0 and 2 ppm/°C (which is less than 6.5 ppm/°C). Feist et al. teach fixing an outer circumference of a flexible substrate to an invar frame (column 5, lines 18-25 and figures 8-9).

4C. As to ***claims 3 and 5***, Feist et al. teach a flexible substrate of polyimide (column 5, lines 18-25).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feist et al. (6,533,968 B1) and Smithsonian Physical Tables (ninth revised edition) in view of Klonis et al. (6,028,351).

6A. As to ***claims 4 and 6***, Feist et al. and the Smithsonian Physical Tables teach all of the claimed limitations except for the frame being comprised of a ceramics-metal complex. However, Klonis et al. teach a frame which holds a substrate (the

substrate being composed of a glass lid, a gasket seal and an integrated circuit on a ceramic base). The substrate (figure 2, numerals 12 & 18) is composed of a ceramics metal composite, specifically silicon carbide and aluminum (column 5, lines 55 et seq.). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the frame of Feist et al. with a ceramics-metal complex as taught by Klonis et al. so as to provide a frame whose thermal expansion coefficient would not cause rupturing or bending of the substrate of which the frame is holding.

/

7. Claims 7, 8, 15, 17, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feist et al. (6,533,968 B1) and Smithsonian Physical Tables (ninth revised edition) in view of Mitsui et al. (4,915,894).

7A. As to ***claims 7 and 27***, the Smithsonian Physical Tables is cited merely as a teaching reference of the thermal expansion coefficient of invar, which is between 0 and 2 ppm/°C (which is less than 6.5 ppm/°C). Feist et al. teach fixing a flexible substrate (polyimide) to an invar frame (column 5, lines 18-25). Neither the Smithsonian Physical Tables nor Feist et al. teach heating the flexible substrate (polyimide) at a temperature that the flexible substrate is thermally shrunk by 0.2% or more. However, Mitsui et al. teach heating a polyimide film to affect thermal shrinkage by not more than 0.3%. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of Feist et al. with thermal shrinkage of a polyimide film as taught by Mitsui et al. so as to provide a taut level surface of the polyimide film across the frame (i.e. thermal shrinkage of the polyimide film would reduce any slack in the film

and provide a more rigid, planar surface). As to the preamble language of claim 7, specifically lines 1-2, the applicant should note that the claim language of lines 3-6 has nothing to do with semiconductor manufacturing and therefore the preamble language adds no patentable weight to the claim.

7B. As to ***claims 8 and 28***, the Smithsonian Physical Tables is cited merely as a teaching reference of the thermal expansion coefficient of invar, which is between 0 and 2 ppm/°C (which is less than 6.5 ppm/°C). Feist et al. teach fixing an outer circumference of a flexible substrate to an invar frame (column 5, lines 18-25 and figures 8-9). Neither the Smithsonian Physical Tables nor Feist et al. teach heating the flexible substrate (polyimide) at a temperature that the flexible substrate is thermally shrunk by 0.2% or more. However, Mitsui et al. teach heating a polyimide film to affect thermal shrinkage by not more than 0.3%. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of Feist et al. with thermal shrinkage of a polyimide film as taught by Mitsui et al. so as to provide a taut level surface of the polyimide film across the frame (i.e. thermal shrinkage of the polyimide film would reduce any slack in the film and provide a more rigid, planar surface). As to the preamble language of claim 8, specifically lines 1-2, the applicant should note that the claim language of lines 3-7 has nothing to do with semiconductor manufacturing and therefore the preamble language adds no patentable weight to the claim.

7C. As to ***claims 15 and 17***, Feist et al. teach a flexible substrate of polyimide (column 5, lines 18-25).

8. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feist et al. (6,533,968 B1), Smithsonian Physical Tables (ninth revised edition) and Mitsui et al. (4,915,894) as applied to claims 7 and 8 above, and further in view of Klonis et al. (6,028,351).

8A. As to ***claims 16 and 18***, Feist et al., the Smithsonian Physical Tables and Mitsui et al. teach all of the claimed limitations except for the frame being comprised of a ceramics-metal complex. However, Klonis et al. teach a frame which holds a substrate (the substrate being composed of a glass lid, a gasket seal and an integrated circuit on a ceramic base). The substrate (figure 2, numerals 12 & 18) is composed of a ceramics metal composite, specifically silicon carbide and aluminum (column 5, lines 55 et seq.). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the frame of Feist et al. and Mitsui et al. with a ceramics-metal complex as taught by Klonis et al. so as to provide a frame whose thermal expansion coefficient would not cause rupturing or bending of the substrate of which the frame is holding.

Allowable Subject Matter

9. Claims 7-26 and 29-34 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

8. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feist et al. (6,533,968 B1), Smithsonian Physical Tables (ninth revised edition) and Mitsui et al. (4,915,894) as applied to claims 7 and 8 above, and further in view of Klonis et al. (6,028,351).

8A. As to ***claims 16 and 18***, Feist et al., the Smithsonian Physical Tables and Mitsui et al. teach all of the claimed limitations except for the frame being comprised of a ceramics-metal complex. However, Klonis et al. teach a frame which holds a substrate (the substrate being composed of a glass lid, a gasket seal and an integrated circuit on a ceramic base). The substrate (figure 2, numerals 12 & 18) is composed of a ceramics metal composite, specifically silicon carbide and aluminum (column 5, lines 55 et seq.). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the frame of Feist et al. and Mitsui et al. with a ceramics-metal complex as taught by Klonis et al. so as to provide a frame whose thermal expansion coefficient would not cause rupturing or bending of the substrate of which the frame is holding.

Allowable Subject Matter

9. Claims 9-14, 19-26 and 31-34 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SBG.

SBG
September 26, 2003

EVAN PERT
PRIMARY EXAMINER